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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,318	01/19/2001	Shinichi Tamura	330-231	6090

7590 09/09/2003

NIXON & VANDERHYE P.C.
8th Floor
1100 North Glebe Rd.
Arlington, VA 22201-4714

EXAMINER

FERGUSON, LAWRENCE D

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 09/09/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

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AS 16

Office Action Summary

Application No.	Applicant(s)	
09/766,318	TAMURA, SHINICHI	
Examiner	Art Unit	
Lawrence D Ferguson	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment and declaration mailed June 19, 2003. Claim 6 was added rendering claims 1-6 pending.

Claim Rejections – 35 USC § 103(a)

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eastes et al. (U.S. 5,789,329) in view of Sproull (U.S. 4,542,106) further in view of JP-A-5-147975.
3. Eastes discloses boron-free glass fibers having compositions consisting of SiO₂, CaO, Al₂O₃ and MgO where the glass contains no fluorine (abstract). Eastes discloses the glass fiber compositions have values for delta T of a temperature and liquidus temperature is at least about 52 C (abstract). The reference discloses the components of the glass fibers along with its surface layer are composed of SiO₂ at 59 to 62.0%, CaO at 20 to 24%, Al₂O₃ at 12 to 15 %, MgO at 1 to 4% Column 3, lines 2-13). Eastes does not disclose the thickness of the silicon dioxide content. Thickness is an optimizable feature because the thickness directly affects the melting point of the glass fibers. Eastes does not disclose the weight percentage of SiO₂ in the exact range Applicant claims. Sproull teaches glass fibers consisting of 58% to 60% SiO₂, 21% to 23% CaO, 11% to 13% Al₂O₃ and 2% to 4% MgO (abstract and column 2, line 67

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through column 3, line 1). Eastes and Sproull are analogous art because they are from the same field of glass fibers. Sproull teaches glass fibers of the same compositions claimed. It would have been obvious to one of ordinary skill in the art to include the 58% to 60% SiO_2 in the glass fibers of Eastes because Sproull teaches using SiO_2 at the claimed percentages results in excellent glass fibers which are highly suitable as reinforcement materials.

Neither Eastes nor Sproull explicitly teaches the surface layer of the glass fiber having an SiO_2 content of at least 90% by weight due to an acid treatment. According to the prior art of the invention, JP '975 teaches a heat resistant glass fiber obtained by immersing a glass fiber containing SiO_2 , CaO , Al_2O_3 and MgO , in the mineral acid, hydrochloric acid at a temperature of 40 to 70 C where the surface layer of the glass fiber is a silicic glass. Additionally, JP '975 teaches the surface layer has a SiO_2 content of greater than 80% by weight (Abstract). All of the references are analogous art because they are from the same field of glass fibers. It would have been obvious to one of ordinary skill in the art, to treat the glass fibers of Eastes with the hydrochloric acid giving the surface layer a SiO_2 content of greater than 80% by weight, because JP '975 teaches that the HCl increases the heat resistance of the glass fiber material (abstract).

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Erickson et al (U.S. 3,847,626) discloses glass fibers which are boron and fluorine free composed of 54.5% to 60% SiO_2 , 17% to 24% CaO , 9% to 14.5% Al_2O_3 and 1.5% to 4.5% MgO (abstract).

Response to Arguments

5. Applicant's remarks to rejection under 35 U.S.C. 103(a) as being unpatentable over Eastes et al. (U.S. 5,789,329) in view of Sproull (U.S. 4,542,106) has been considered but is found to be unpersuasive. Applicant argues the Office Action, paper No. 13, makes no mention of the Declaration sent March 14, 2003. As indicated in the Office Action mailed on April 10, 2003, all arguments made regarding the rejection of Eastes et al. (U.S. 5,789,329) was considered moot based on grounds of new rejection, which includes the Declaration submitted by the inventor, Mr. Tamura. Applicant argues improved heat resistance is not an objective of Easters disclosure. Examiner is not persuaded by this argument because obtaining improved heat resistance is an intended use of the instantly claimed invention. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Applicant further argues Eastes does not disclose that a surface layer of the glass fiber is enriched with silicon dioxide. Examiner respectfully disagrees because The reference discloses the components of the glass fibers along with its surface layer are composed of SiO₂ at 59 to 62.0%, CaO

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at 20 to 24%, Al_2O_3 at 12 to 15 %, MgO at 1 to 4% Column 3, lines 2-13). Applicant argues the glass fiber of Eastes has a high silicon dioxide content which makes it difficult to treat with an acid. Applicant states the Declaration prepared by the present inventor demonstrates this aspect. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Although Eastes does not disclose the weight percentage of SiO_2 in the exact range Applicant claims, Sproull teaches glass fibers consisting of 58% to 60% SiO_2 which is in the claimed range of Applicant. Because Applicant does a comparative example solely based on one reference of the combined rejection, the Declaration is not commensurate with the scope of cited art used in the rejection. In order to have an adequate experimental example, applicant would have to consider Eastes as well as Sproull. Applicant argues even if the Eastes glass fiber is subjected to acid treatment a discrete surface layer rich in silicon dioxide does not result. Applicant lacks support for this ascertainment. Applicant argues he has not had a full and complete examination of his claims having regard to all the information contained in the record of the application so the next communication should not be made final. Examiner respectfully disagrees because As indicated in the Office Action mailed on April 10, 2003, all arguments made regarding the rejection of Eastes et al. (U.S. 5,789,329) was considered moot based on grounds of new rejection, which includes the

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Declaration submitted by the inventor, Mr. Tamura. Furthermore, Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

In response to applicant's argument that Sproull contains an essential component, 1 to 5% of titanium dioxide that is not an essential component for the glass fiber, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Furthermore, instant claim 1 comprises a heat-resistant glass fiber comprising various components. The claim language comprising does not limit the prior art to solely the material found in the instant claims. The purpose of the Sproull reference is to teach the conventionality of glass fibers comprising silicon dioxide having a weight percentage of 56 to 58.5%. Applicant further argues titanium dioxide is not a desirable component since titanium dioxide is not easily soluble in acid. Applicant lacks support this ascertainment. Applicant argues the silicon dioxide of Sproull is generally higher as compared to instant claim 1. Examiner is not persuaded by this argument because the silicon dioxide content of Sproull meets the claimed range of the instant Application. Applicant argues the heat resistance of the glass fiber described in JPA is unacceptable for use in a muffler. Examiner is not persuaded by this argument because the glass fiber being used in a muffler is an intended use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention

and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Applicant argues JPA contains a large amount of B_2O_3 . Examiner respectfully disagrees because the Abstract of JPA teaches the heat resistant glass fiber has practically the same glass composition of borosilicate glass but only the surface layer is made of siliceous glass having silicon dioxide content, meaning the glass fiber does not contain a large amount of borosilicate.

Applicant argues Eastes has a large silicon dioxide content and is therefore difficult to treat with an acid as demonstrated and confirmed by the Declaration of record. Although Eastes does not disclose the weight percentage of SiO_2 in the exact range Applicant claims, Sproull teaches glass fibers consisting of 58% to 60% SiO_2 which is in the claimed range of Applicant. Because Applicant does a comparative example solely based on one reference of the combined rejection, the Declaration is not commensurate with the scope of cited art used in the rejection. In order to have an adequate experimental example, applicant would have to consider Eastes as well as Sproull. Applicant reiterates the glass fiber of Sproull contains titanium dioxide making it difficult to treat with an acid. Applicant lacks support for this ascertainment. Applicant further argues the glass fibers described in Eastes and Sproull are difficult to treat with an acid. Applicant lacks sufficient support for this ascertainment.

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Applicant argues since the glass fibers described in Eastes and Sproull are difficult to treat with an acid, one will not obtain heat-resistant-glass fibers having a silicon dioxide rich surface layer. Because Applicant lacks sufficient support for this ascertainment of the glass fibers described in Eastes and Sproull being difficult to treat with an acid, the rejection of claims 4-5 is maintained for reasons of record.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is (703)

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305-9978. The examiner can normally be reached on Monday through Friday 8:30 AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. Please allow the examiner twenty-four hours to return your call.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2351.



Lawrence D. Ferguson
Examiner
Art Unit 1774

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

